

# Disrupting the calendar: Measuring the impacts of a week-long fall break on stress and academic success in undergraduate students

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**ABSTRACT:** The mental health of post-secondary students has received recent attention as popular media reports and empirical research indicate increased rates of stress and mental illness in this group (Booth et al., 2015; Chiose, 2016; Lunau, 2012), and higher rates of stress than the general population (Adlaf et al., 2001). As a result, multiple initiatives have been introduced on university campuses in order to educate students and instructors about mental wellness, and existing counselling services have been expanded to reach more students.

A consensus has emerged among many Canadian post-secondary institutions that a mid-semester break in the fall academic term would support student mental health and increase well-being (e.g., Cramer et al., 2016; *McMaster Daily News*, 2015). Accordingly, term calendars that had become highly routinized for decades are now being disrupted with the intention of addressing concerns around student wellness. Upon review of 70 Canadian universities, 49 indicated that some form of a multi-day break was scheduled in the 2016 fall term. In line with this trend, a week-long fall break in the term calendar was first introduced at our own institution in October 2015.

Given the wide-scale adoption of fall breaks in Canadian higher education, it is imperative to determine their impact on student stress. Our multi-institutional, interdisciplinary team combined qualitative and quantitative approaches to provide the first comprehensive assessment of the impacts of a fall break. To do this, we surveyed undergraduate students about their experience of the fall break, and collected standardized measures of experienced stressors and perceptions of stress before and after the break. We also assessed salivary cortisol levels (a physiological indicator of stress) from students at our university and a university without a break, and hosted several focus groups to develop a narrative of students' experience. In addition, undergraduate instructors were surveyed in order to gain insight on the impact of the fall break on their course planning and teaching.

This session presents the preliminary results of an ongoing longitudinal study, and will initiate a broader discussion on how SoTL can inform institutional responses to student stress and its impact on teaching and learning.

## 1 INTRODUCTION

University and college students in Canada and the United States have long reported higher levels of stress than the general population (Adlaf, Gliksman, Demers, & Newton-Taylor, 2001), but stress and anxiety in this group have markedly increased in recent years (Booth, Sharma, & Leader, 2015). A 2016 report assessing well-being in over 40 000 students across 40 Canadian post-secondary institutions revealed that students are in a state of crisis. A total of 59.6% of respondents felt hopeless, 89.5% felt overwhelmed, 88.2% felt exhausted, 64.5% felt overwhelming anxiety, and 13% had seriously considered suicide. Students reported that the top four factors impacting their academic performance were stress (42.2%), anxiety (32.5%), sleep difficulties (28.4%), and depression (20.9%) (American College Health Association, 2016).

Informed by these statistics, many Canadian higher education institutions have recognized the need to focus on the mental well-being of their students, and in response are implementing a range of stress reduction strategies. These initiatives aim to educate students and facilitate discussion about mental health (e.g., COPE McMaster; More Feet on the Ground), and to train staff and faculty to meet the needs of students (e.g., *Green Folder*; University of Guelph Counselling Services). Student organizations and provincial governments are also developing programs to support student mental health (e.g., Bartlett, 2014; Centre for Innovation on Campus Mental Health; [www.good2talk.ca](http://www.good2talk.ca)).

The necessity of these initiatives is difficult to overstate. Accordingly, there continues to be a conversation on Canadian campuses and more recently in the popular press regarding how universities can do more to help students manage the stresses associated with post-secondary education (Bellemare, 2017; Casey, 2017; Chan, 2016; Chiose, 2016; Frangou, 2016; Lunau, 2012; Pfeffer, 2016; Wingrove, 2013). One of the most comprehensive responses was developed at Queen's University in Ontario, where several student suicides led to the formation of a task force to discuss student mental health (Clapham et al., 2012). As part of its analysis, the task force recommended the introduction of a break from studies during the fall academic term. Many Canadian universities have followed this recommendation, and "fall breaks" are now becoming the norm: upon our own recent review of the academic calendars of 70 Canadian universities, 49 indicated that some form of a multi-day break would occur in the 2016 fall term.

Given the increasing adoption of fall breaks, it is critical to investigate the broader impact of such stress-reduction interventions. Through a multi-institutional collaboration, this study aims to address a gap in the literature regarding the impact of a fall break on students and to consider the implications for teaching and learning in higher education. Our interdisciplinary team combined qualitative and quantitative approaches to provide what we believe to be the first comprehensive assessment of the impacts of a fall break on undergraduate students. This paper briefly presents the preliminary findings of an ongoing longitudinal study using online surveys, hormonal analysis of stress, and focus groups, and discusses the potential implications of a fall break for teaching and learning.

## **2 METHODOLOGY**

The following mixed-methods approach was used to assess the impact of the fall break on student stress and academic performance.

### **2.1 Student Surveys**

During the Fall 2016 academic term, all undergraduate students at our university (approximately 25 000) were invited to participate in a two-part survey focusing on stress. Students completed the survey in October during the week before the fall break ( $n = 1455$ ) and again the week after the fall break ( $n = 2014$ ). The survey included two validated measures of stress: the Undergraduate Stress Questionnaire (Cohen, Kamarck, & Mermelstein, 1983), which assesses the number of stressors a student has experienced recently, and the Perceived Stress Scale (Crandall, Preisler, & Ausprung, 1992), which measures perceived stress in students. We included both measures to explore the sources of stress as well as how students were managing them. We also collected data on a variety of demographic variables. All surveys were hosted online; students were emailed with an invitation to participate.

### **2.2 Hormonal Assessment of Stress**

In collaboration with a behavioural endocrinology lab at the University of New Orleans, we completed a pilot project that establishes protocols for saliva collection and hormonal analysis around the fall break (Khan, Poole, & Beaton, submitted). We collected saliva samples from first-year male engineering students at our university ( $n = 11$ ) and a comparable university ( $n = 5$ ). In order to control for within-group variance in hormonal output, we included only males in the study and only first-year student engineers from each school due to similar class schedules. The students at the comparison university do not have a fall break but have similar entrance and course requirements to those of our university; they served as a control group.

Participants were given saliva collection microtubes and were asked to identify which day in the week before the fall break that they considered to be most stressful and a day in the week after the break that they considered equally stress-inducing. Students were instructed to go to sleep between 10:00-11:30PM on the night before their selected days, to wake at 7AM, and to attend all classes on those days. They were asked to collect saliva using a modified version of the passive drool technique (Granger et al., 2007): to avoid eating around the time of saliva collection and to drool directly into a microtube at 7AM, 9AM, 12PM, 3PM, 8PM on each of their two self-identified days. Saliva samples were analyzed for hormonal analysis of dihydroepiandrosterone (DHEA) and cortisol using standardized enzyme immunoassay kits purchased from Salimetrics® (Khan, Poole, & Beaton, submitted).

### 2.3 Student Focus Groups

Students who completed either of the online surveys in October 2016 were invited to provide their consent to be contacted to participate in a focus group meant to further explore their experience with the fall break. Of those students who consented to be contacted, 27 participated in one of four focus group sessions held between October 31-November 4, 2016. The semi-structured focus groups asked participants to discuss such topics as their activities during the fall break, the timing of the break itself, and whether the fall break impacted stress levels as well as their ability to be academically successful. Transcripts were produced from the audio recordings of the focus groups and were coded by a member of the research team in collaboration with two student partners using NVivo, a qualitative data analysis software program.

**Note.** We initially used these methods in fall 2015, and have published that work elsewhere (Poole, Agnew, & Khan, in press). Forthcoming work will describe the multi-year patterns in our findings. As well, in 2016 we administered the surveys and sampled saliva among students at another Ontario university which has a later fall break; this population served as our comparison group. Data comparing the two populations will be presented in forthcoming work. The preliminary data presented here refers only to data collected at our own institution in 2016.

## 3 FINDINGS

Our work indicates that the effects of a fall break on student stress are not straightforward. Responses on the two standardized measures of stress (Undergraduate Stress Questionnaire, Perceived Stress Survey) revealed that although students reported approximately the same number of stressors after the break as before it, they experienced higher levels of overall stress after the break. Our 2015 data revealed similar patterns, as well as significant effects of several demographic variables (e.g., gender, first-generation post-secondary student). Analyses of demographic variables are ongoing and will be presented in forthcoming work.

The hormonal data indicate a marginal effect of the fall break on stress hormones cortisol and DHEA. Engineering students at the university that did not have a weeklong break had a slightly greater output of stress hormones than those that experienced time away from school. However, due to our limited sample (N=16), we are cautious in our interpretation of the data. We do however consider our preliminary findings promising for the pilot phase of our study, as they provide some evidence that a fall break may offset a typical increase in stress during the term.

Frequency analysis of the focus group transcripts produced findings that were consistent with our survey results, namely that students were mixed in their self-assessment of whether the fall break reduced stress and increased their academic performance. In all four focus groups held in late October 2016, students generally reported a positive personal experience of the fall break. Students appreciated the additional time spent at home with family and friends and the opportunity to rest and study for midterm exams scheduled immediately after the break. However, the negative impact of the fall break on course scheduling and the timing of midterms and assignments was also of primary concern among focus group participants. This was reflected in the most frequently cited themes, “course scheduling” and “timing of fall break.”

Analysis of the four focus groups showed that the highest recurring code related to the scheduling of course assignments, and the shifts in workload that resulted (Frequency: 69). Upper-year undergraduate students in particular reported that, in comparison to previous years, the due dates of assignments and the scheduling of midterm examinations were compressed, such that they were scheduled either in the week immediately preceding (October 3-7, 2016) or following (October 17-21, 2016) the fall break. Several focus group participants asked whether instructors and departments could better coordinate the timing of their assessments. Another common concern for students related to the timing of the break in the fall term (Frequency: 54). Although students acknowledged that scheduling the break during the week of the Canadian Thanksgiving holiday (October 10, 2016) limited the number of lost instructional days and gave them additional time with their families, many students considered the timing of the break to be much too early in the term to be effective in meaningfully reducing stress and in supporting academic performance. Several focus group participants reported that the fall break significantly disrupted their adjustment to life on a university campus and to the weekly course routine they had begun to establish.

#### 4 IMPLICATIONS & RECOMMENDATIONS

Given the wide-scale adoption of fall breaks by many Canadian post-secondary institutions as a support for student well-being, it is critical to investigate whether implementation of such a break does in fact reduce stress levels and improve well-being among students. Our data do not provide clear evidence of such an improvement, although they do indicate that a fall break seems to be a generally positive experience for students and the university community as a whole.

We believe our work emphasizes the need for university administrative decisions to be informed by methodologically sound evidence. In light of the dearth of research on fall breaks, it is concerning to note the prevalence of fall breaks across Canada and the consistent presupposition that these breaks reduce student stress. An evidence-based approach to such policy changes, more in line with the evidence-based pedagogy that has become central to SoTL research (Felten, 2013; Poole, 2007), could facilitate more effective and efficient initiatives at post-secondary institutions. Direct study would also allow consideration of long-term impacts on the university community and could highlight necessary modifications. For example, one consequence of a full-week fall break is the compression of the final exam period, both in terms of the transition from classes to December exams and the length of each exam. A shorter fall break would not require such compression, and thus may offer similar benefits without risk to student learning and test performance.

Following from this, a significant number of focus group participants indicated that their academic workloads increased substantially immediately prior to and following the fall break. Students consistently requested greater coordination of the timing of assessments within and between departments. While the complexities of such a system may be considerable, and instructors may be reluctant to centrally coordinate their assessment schedules with colleagues, avoiding an overly compressed period of assessments could be one step in moderating student stress at a critical time in the academic calendar. Additionally, such a strategy could allow students to distribute their studying instead of “cramming”, thereby leading to longer-lasting learning (e.g., Krug, Davis, & Glover, 1990; Schmidt & Bjork, 1992).

Intriguingly, our data suggest that the simple terminology surrounding the fall break creates confusion amongst students and instructors about how the break should be used. For example, at our institution, the terms “fall break” and “fall reading week” have been used interchangeably, but they imply very different uses of the week. If students, instructors, and university staff are unclear as to the purpose of the fall break, there will be variation in how students choose to use their time, whether instructors schedule course assessments before or after the break, and what co-curricular programming university departments offer to undergraduate students. Clear explanations of the goals of the break could decrease such inconsistencies. Additionally, institutions may wish to consider a global test ban one to two days before and particularly after the break to allow students to transition into their regular routines.

At the same time, it is important for students to develop effective time management plans *before* they leave for a multi-day break. There is some evidence to suggest that a heavy workload upon the return to work in an occupational setting can decrease the benefits gained while away from work (Fritz & Sonnentag, 2006; Westman & Etzion, 2001). Creating opportunities (prior to the start of the break) for students to set priorities and carefully consider how they might manage free time may result in an increased sense of control and stress reduction upon their return, and may also encourage more distributed learning. Instructors could also support effective time management by requiring students to periodically complete small activities relevant to the course over the fall break.

We plan to continue our investigation of the impact of multi-day breaks on student stress by administering our surveys to more Canadian institutions in order to compile a comprehensive assessment. Since stress can also be measured through noninvasive hormone measures via saliva samples (Smyth, Hucklebridge, Thorn, Evans, & Clow, 2013), our aim is to continue our pilot work with hormones in order to provide a more valid representation of stress to support the data collected from our more subjective measures (e.g., surveys, focus groups). Given the large-scale adoption of fall breaks, we believe that this work is critical to encourage and support evidence-based approaches to the development and implementation of student-centred policies at post-secondary institutions.

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